

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-0116084

Owner: Donald and Nancy Dotson
Address: 23552 Monroe Road 483, Stoutsville, MO 65283

Continuing Authority: Same as above
Address: Same as above

Facility Name: Stoutsville Resort & R.V. Park, CCC
Address: 23552 Monroe Road 483, Stoutsville, MO 65283

Legal Description: NE ¼, SW ¼, Sec. 19, T55N, R8W, Monroe County

Receiving Stream: Unnamed Tributary to Buck Creek (U)
First Classified Stream and ID: Mark Twain Lake (L2)(007033)
USGS Basin & Sub-watershed No.: (07110005-040003)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See Page 2

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

June 27, 2003
Effective Date


Stephen M. Mahford, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

June 26, 2008
Expiration Date
MO 780-0041 (10-93)

G. Irene Crawford, Director, Northeast Regional Office

FACILITY DESCRIPTION (continued)

Outfall #001 - Domestic Wastewater - SIC #4952/7011 No-discharge System

One cell storage lagoon/wastewater irrigation/sludge is retained in lagoon.
Design population equivalent is 93. Design flow is 3573 gallons per day (1-in-10 year design including net rainfall minus evaporation).
Average design flow is 3180 gallons per day (dry weather flows).
Actual flow is 1500 gallons per day.
Design sludge production is 0.81 dry tons per year.

Outfall #002 - Swimming Pool Discharge - SIC#7999

Discharges of filter backwash and pool drainage from swimming pool. Filter backwash discharges shall be infrequent and of low volume.

Receiving Stream Watershed: an unnamed tributary that flows into Mark Twain Lake.

Facility Type:

No-discharge Storage and Irrigation System for year seasonal flows into Mark Twain Lake, a 303(d) listed stream.

<u>Design Basis:</u>	<u>Avg Annual</u>	<u>Recreational Season</u>	
		<u>(April-Nov)</u>	<u>(Dec-March)</u>
Design dry weather flows	<u>3180</u> gpd	<u>2544</u> gpd	<u>636</u> gpd
Design with 1-in-10 year flows	<u>3573</u> gpd	<u>2858</u> gpd	<u>715</u> gpd
Design PE <u>93</u>			

Storage Basin/Tank:

Freeboard for basin: 2 feet
Storage volume (minimum to maximum water levels) 165,278 gallons

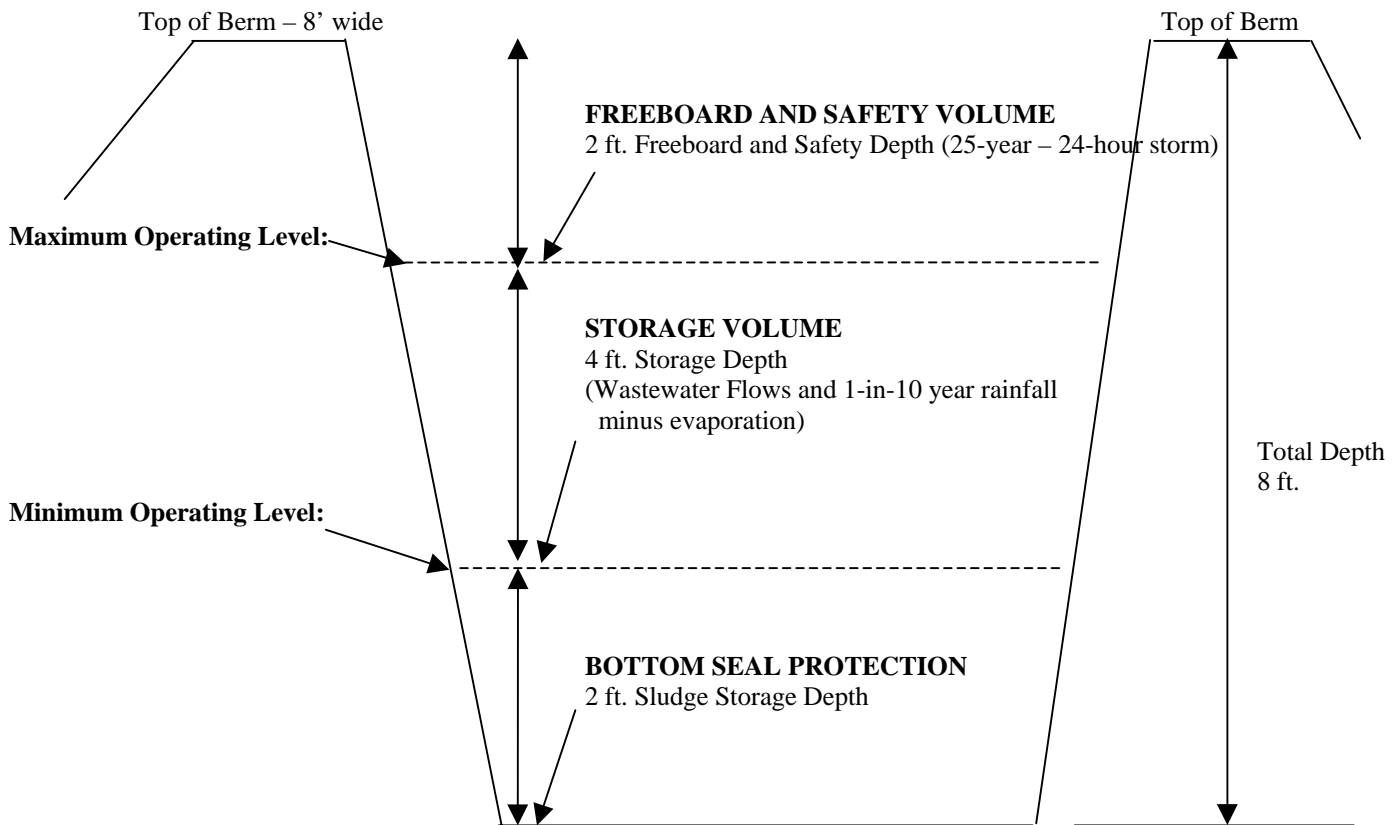
Days of Storage

<u>Storage Capacity:</u>	<u>Recreational Season</u>	
	<u>(April-Nov)</u>	<u>(Dec-March)</u>
Design for Dry weather Flows:	<u>65</u> days	<u>260</u> days
Design with 1-in 10 year flows:	<u>58</u> days	<u>231</u> days

Land Application:

Irrigation Volume/year: 697,352 gallons (including 1-in-10 year flows)
Irrigation areas: 1.07 acres at design loading (0.92 acres total available)
Application rates/acre: 0.5 inch/hour; 1 inch/day; 3 inches/week; 28 inches/year
Field slopes: less than 2 percent
Equipment type: Distribution pipe
Vegetation: Pasture
Application rate is based on: hydraulic loading rate

LAGOON PROFILE



Cell #1

<u>Lagoon Dimensions:</u>	<u>(Length x Width)</u>	<u>Surface Area</u>	<u>Depth from Bottom</u>	<u>Pump down depth (from berm)</u>
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Center Line Top Berm:	106x106	10,404 sq.ft.	by 8 feet depth	
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Inside Top Berm:	98 x 98	9,604 sq.ft.	by 8 feet depth	
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Freeboard & Safety Vol:	86 x 86	8,464 sq.ft.	by 6 feet depth	2 feet
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Maximum operating level:			6 feet depth	2 feet
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Minimum operating level:			2.0 feet depth	6 feet
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Aerobic BOD design basis:			2.0 feet depth	6 feet
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Storage volume (minimum to maximum water levels): 165,278 gallons

Berm top width: 8 feet Berm runoff area (Centerline to 2 ft freeboard and safety volume): 3840 sq.ft.

1-in-10 year annual storm water flows into lagoon (R-E): 17,411 cu.ft. (130,234 gallons)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 4 of 9	
					PERMIT NUMBER MO-0116084	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u> - Emergency discharge from lagoon (Note 1)						
Flow	MGD	*			once/day**	24 hr. estimate
Biochemical Oxygen Demand ₅	mg/L		65	45	once/week**	grab
Total Suspended Solids	mg/L		120	80	once/week**	grab
Ammonia Nitrogen as N	mg/L	*			once/week**	grab
Temperature	°F	*			once/week**	grab
pH - Units	SU	***		***	once/week**	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>October 28, 2003</u> .						
<u>Outfall #001</u> - Land Application Operational Monitoring (Notes 2 & 3)						
Lagoon Freeboard	feet	*			once/month	measured
Irrigation Period	hours	*			daily	total
Volume Irrigated	gallons	*			daily	total
Application Area	acres	*			daily	total
Application Rate	inches/ acre	*			daily	total
Rainfall	inches	*			daily	total
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>January 28, 2004</u> .						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

MO 780-0010 (8/91)

					PERMIT NUMBER MO-0116084	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall # 002 - Filter Backwash and Pool Discharge						
Backwash Outfalls (Note 4) Volume - Note 5	gallons	*		*	once/year	estimate
Chlorine, Total Residual****	mg/L	0.02**		0.02**	once/year	grab
Settleable Solids	mL/L/hr	1.5		1.5	once/year	grab
Dissolved Oxygen - Note 6	mg/L	*		*	once/year	grab
pH - Units	SU	***		***	once/year	estimate
Pool Drainage Volume (Note 5)	gallons	*		*	once/year	grab
Total Residual Chlorine****	mg/L	0.02**		0.02**	once/year	grab
Settleable Solids	mL/L	1.5		1.0	once/year	grab
Dissolved Oxygen (Note 6)	mg/L	*		*	once/year	grab
pH - Units	SU	***		***	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>October 28, 2003</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** Monitor only when discharge occurs. Report as no-discharge when a discharge does not occur during the report period.
- *** pH is measured in pH units and is not to be averaged. The pH is to be maintained at or greater than 6.0 pH units.
- **** Chlorine residual shall be determined using a colorimeter or other analytical instrument able to measure concentration down to 0.01 mg/L.

Note 1 - **No-discharge facility requirements.** Wastewater shall be stored and land applied during suitable conditions so that there is no-discharge from the lagoon or irrigation site. An emergency discharge may occur when excess wastewater has accumulated above feasible irrigation rates due to precipitation exceeding the 1-in-10-year 365 day rainfall or the 25-year 24-hour storm event.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 2 - Records shall be maintained and summarized into an annual operating report, which shall be submitted by January 28th of each year for the previous calendar year period. The report shall include the following:

- a. Record of maintenance and repairs performed during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year;
- b. The number of days the lagoon has discharged during the year, the discharge flow, the reasons discharge occurred and effluent analysis performed; and
- c. A summary of the irrigation operations including freeboard at the start and end of the irrigation season, the number of days of irrigation for each month, the total gallons irrigated, the total acres used, crops grown, crop yields per acre, the application rate in inches/acre per day and for the year, the monthly and annual precipitation received at the facility and summary of testing results.

Note 3 - Lagoon freeboard shall be reported as lagoon water level in feet below the overflow level. See Special Conditions for Wastewater Irrigation System requirements.

Note 4 - If more than one discharge of filter backwash water occurs in a month, testing is required for only one discharge event. If no discharge occurs in a given month, report as "no-discharge" for that month.

Note 5 - Estimate the volume of the total gallons of water that is released. The release rate shall be controlled to avoid high volumes of water being discharged into small streams that can cause stream channel erosion or can cause downstream flooding or property damage.

Note 6 - De-chlorination can lead to a lowering of the dissolved oxygen (DO) concentration in the water that is discharged. If necessary, use aeration to maintain the DO level above 5.0 mg/L to protect aquatic life in the receiving stream.

B. STANDARD CONDITIONS

1. Irrigation Design. Permittee shall operate the land application system in accordance with the design parameters listed in the Facility Description section of this permit:
 - (1) No-Discharge System. When the Facility Description is No-Discharge, wastewater must be stored and irrigated at appropriate times. There shall be no-discharge from the irrigation site or storage lagoon except due to precipitation exceeding either the 1-in-10 year rainfall event for the design storage period or the 25-year-24-hour rainfall event.
2. Equipment Checks during Irrigation. The irrigation system and application site shall be visually inspected at least once/day during wastewater irrigation to check for equipment malfunctions and runoff from the irrigation site.

C. SPECIAL CONDITIONS (continued)

1. Report as no-discharge when a discharge does not occur during the report period.
2. Outfalls must be marked in field and on the topographic site map submitted with the permit application.
3. Water Quality Standards
 - a. Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
 - b. General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.
4. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.
5. Lagoons and earthen basins shall have a liner that is designed, constructed and maintained. If operating records indicate excessive percolation, the department may require corrective action as necessary to eliminate excess leakage.

C. SPECIAL CONDITIONS (continued)

6. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities

- a. Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
- b. If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids that are removed from the domestic wastewater treatment lagoon during lagoon clean-out and maintenance activities. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids from the lagoon. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

7. Annual Report.

An annual report for each outfall is required in addition to the listed reporting under Section A of the permit. The annual report shall be submitted by January 28 of each year for the previous growing season from October 1 through September 30 or an alternate 12 month period approved by the Department and listed in the Operation and Maintenance Manual. This report shall be submitted using report forms approved by the Department and shall include a summary of the monitoring and record keeping required by the Special Conditions and Standard Conditions of this permit.

8. Wastewater Irrigation System.

- a. Discharge Reporting. Any unauthorized discharge from the lagoon or irrigation system shall be reported to the department as soon as possible but always within 24 hours. Discharge is allowed only as described in the Facility Description and Effluent Limitations sections of this permit.
- b. Lagoon Operating Levels - No-discharge Systems. The minimum and maximum operating water levels for the storage lagoon shall be clearly marked. Each lagoon shall be operated so that the maximum water elevation does not exceed one foot below the overflow point except due to exceedances of the 1-in-10 year or 25-year-24 hour storm events. Wastewater shall be land applied whenever feasible based on soil and weather conditions and permit requirements. Storage lagoon(s) shall be lowered to the minimum operating level prior to each winter by November 30.
- c. Emergency Spillway. Lagoons and earthen storage basins should have an emergency spillway to protect the structural integrity of earthen structures during operation at near full water levels and in the event of overflow conditions. The spillway shall be at least one foot below top of berm. The department may waive the requirement for overflow structures on small existing basins.
- d. General Irrigation Requirements. The wastewater irrigation system shall be operated so as to provide uniform distribution of irrigated wastewater over the entire irrigation site. A complete ground cover of vegetation shall be maintained on the irrigation site unless the system is approved for row crop irrigation. Wastewater shall be land applied only during daylight hours. The wastewater irrigation system shall be capable of irrigating the annual design flow during an application period of less than 100 days or 800 hours per year.
- e. Saturated/Frozen Conditions. There shall be no irrigation during frozen, snow covered, or saturated soil conditions.
- f. Buffer Zones. There shall be no irrigation within 300 feet of any down gradient pond, lake, sinkhole, losing stream or water supply withdrawal; 100 feet of gaining streams or tributaries; 150 feet of dwelling; or 50 feet of the property line.

C. SPECIAL CONDITIONS (continued)

8. Wastewater Irrigation System (continued)

- g. Public Access Restrictions. Public access shall not be allowed to the irrigation site(s).
- h. Operation and Maintenance Manual.
The permittee shall develop, maintain and implement an Operation and Maintenance (O&M) Manual that includes all necessary items to ensure the operation and integrity of the waste handling and land application systems. Copies of the O&M Manual and subsequent revisions shall be submitted to Regional Office for review and approval. The O&M Manual shall be reviewed and updated at least every five years.

D. OTHER REQUIREMENTS

- 1. The Total Residual Chlorine (TRC) concentration in the swimming pool discharge must not exceed 0.02 mg/L. Chemical dechlorination may be used to remove chlorine if necessary to meet chlorine limits. It is recommended that in lieu of chemical dechlorination, chlorination be ceased at least three (3) days or longer prior to discharge of pool drainage or at the end of the recreational season to allow the chlorine to naturally dissipate.
- 2. Filter backwash should be directed to grassed areas or other buffers to the extent possible to prevent a direct discharge to waters of the state. Effluent limitations are applicable where the discharge leaves the property boundary. If retention structures are needed to meet the effluent limitations, contact the Northeast Regional Office to determine if a construction permit is required.
- 3. In the event that the discharge is known to cause a fish kill, the permittee shall immediately contact the Department's Emergency Response Team at (573) 634-2436 and the discharge shall be ceased.
- 4. An annual report is required and should include the following information:
 - a. Source of the water for the pool.
 - b. Discharge monitoring parameters as listed in Section A, "Effluent Limitations and Monitoring Requirements."
 - c. A list of all chemicals other than chlorine compounds that are added to the pond or pool for algae control or other purposes and the estimated quantities of such chemicals.
 - d. Dates of operation of the pool.